privacy for cyborgs?

tlr@w3.org / @roessler
implementation of geolocation for the current version of Firefox uses a single hard-coded location provider to enable WiFi-based positioning conforming to the W3C Geolocation specification so that developers can begin experimenting with enabling location-aware experiences today.

It's not just restaurant lookups that location enables on the desktop. For example, imagine an RSS reader that knows the difference between home and work and automatically changes its behavior appropriately. Or a news site whose local section is, in fact, always actually local. Or a bank that only allows you to login from certain physical locations, like your house.

What will you imagine? Even if you can’t code, you can share your thoughts via the Concept Series, a forum for surfacing, sharing, and collaborating on new ideas and concepts.

Try It Out

To see Geode in action you can also check out the demo Food Finder, which shows you cafes and restaurants within walking distance.
2010
geolocation is happening
“early adopter games”
instrumenting our lives
Distance: 15.80 km  |  Avg. Pace: 7:13 per km  |  Avg. Speed: 8.32 m/km
Climbed: 217 ft  |  Burned: 1422 calories

Activity History:
- **April**
  - 4/10/10: 4:22 pm 15.80 km
  - 4/9/10: 8:10 pm 14.20 km
  - 4/8/10: 1:00 pm 6.70 km
  - 4/7/10: 7:56 pm 10.18 km
  - 4/6/10: 3:04 pm 6.44 km
  - 4/4/10: 12:23 pm 14.87 km
  - 4/3/10: 1:10 pm 5.95 km
  - 4/1/10: 12:55 pm 7.22 km

- **March**
  - **February**
  - **January**
broadcasting
our lives
Results for runkeeper live

fbeauregard: Watch my run right now with @RunKeeper Live http://rnkpr.com/a4qm5p #RKLive #RunKeeper
about 1 hour ago from RunKeeper · Reply · View Tweet

ilostanotherme: Watch my walk right now with @RunKeeper Live http://rnkpr.com/a4qljh #RKLive #RunKeeper
about 2 hours ago from RunKeeper · Reply · View Tweet

runningjock: Watch my run right now with @RunKeeper Live http://rnkpr.com/a4q10f #RKLive #RunKeeper
about 2 hours ago from RunKeeper · Reply · View Tweet

ppowell: Watch my run right now with @RunKeeper Live http://rnkpr.com/a4qksy #RKLive #RunKeeper
about 2 hours ago from API · Reply · View Tweet

rdkl713: Watch my walk right now with @RunKeeper Live http://rnkpr.com/a4qkh #RKLive #RunKeeper
about 2 hours ago from RunKeeper · Reply · View Tweet

Bultar: Watch my run right now with @RunKeeper Live http://rnkpr.com/a4qk6m #RKLive #RunKeeper
about 2 hours ago from RunKeeper · Reply · View Tweet

pataudied: Watch my run right now with @RunKeeper Live http://rnkpr.com/a4qibv #RKLive #RunKeeper
about 2 hours ago from RunKeeper · Reply · View Tweet
Results for withings

6 minutes ago from WiTtit · Reply · View Tweet

**metabonow**: わたしの体重 : 67.7 kg. 測定なう！ [http://withings.com](http://withings.com)
8 minutes ago from WiTtit · Reply · View Tweet

**LifeMeasure**: My weight: 186.7 lb. 17.7 lb to go. [http://withings.com](http://withings.com)
12 minutes ago from WiTtit · Reply · View Tweet

32 minutes ago from WiTtit · Reply · View Tweet

**lees_scale**: My weight: 179.2 lb. [http://withings.com](http://withings.com)
44 minutes ago from WiTtit · Reply · View Tweet

**kevinsweight**: My weight: 215.8 lb. my weight today [http://withings.com](http://withings.com)
about 1 hour ago from WiTtit · Reply · View Tweet

[http://withings.com](http://withings.com)
about 1 hour ago from WiTtit · Reply · View Tweet

**UncleLar**: My weight: 227 lb. 35 lb to go. according to my Withings scale [http://withings.com](http://withings.com)
A world of possibilities with The Withings Body Scale

You subscribed an online coaching program? You like to share your progress with your community? Or maybe you want to store all your health information in one place? The Withings Body Scale can directly and securely send your data (weight, IMC, fat mass, Lean mass) to the best players in these areas.

Imagine that by just stepping on the scale, your body analysis data can be sent directly to community sites such as Facebook or Twitter, services of personal health record, or to nutrition coaching and fitness coaching websites. These services can then use your measurements to advise you and accompany you in your diet or in your fitness activity.

Service providers compatible with the Withings Body Scale

The services listed below are already connected with the Withings Body Scale. This list grows very quickly.

DailyBurn is the premier fitness tracking social network. We help people meet their health and fitness goals by finding workout programs, tracking food and nutrition, and connecting them with others for motivation.

Special Deal - get a 20% off on the DailyBurn Pro Plan thanks to this coupon code: DBWITHINGS20
the web: a social sensor network
WHEN AN EARTHQUAKE HITS, PEOPLE FLOOD THE INTERNET WITH POSTS ABOUT IT—SOME WITHIN 20 OR 30 SECONDS.

ROBM163 HUGE EARTHQUAKE HERE!

DAMAGING SEISMIC WAVES TRAVEL AT 3-5 KMS. FIBER SIGNALS MOVE AT ~200,000 KMS.
(MINUS NETWORK LAG)

THIS MEANS WHEN THE SEISMIC WAVES ARE ABOUT 100 KM OUT, THEY BEGIN TO BE OVERTAKEN BY THE WAVES OF POSTS ABOUT THEM.

PEOPLE OUTSIDE THIS RADIUS MAY GET WORD OF THE QUAKE VIA TWITTER, IRC, OR SMS BEFORE THE SHAKING HITS.

QUAKE

TWEETS

WHOA! EARTHQUAKE!

RT @ROBM163 HUGE EARTHQUAKE HERE!

SADLY, A TWITTERER'S FIRST INSTINCT IS NOT TO FIND SHELTER.
privacy in web technologies?
separation of concerns
players:
users
user agents
service providers
what could the user agent do?
user consent
notice and transparency
data minimization
e.g., only say what city the user is in
user preferences
e.g., retention time

e.g., permission to retransmit
display the provider’s policy, match it against user preferences
not deployed in current browsers
deployment incentives?
maps.google.com wants to know your location. Learn More...

Share Location  Don’t Share  Remember for this site
http://maps.google.com/ wants to track your physical location

Learn more
This page contains elements from the following sites that are tracking your location:

maps.google.com

Clear these settings for future visits

Manage location settings...

Done
location privacy: concern for user and service provider alone?
how about the service providers?
geolocation API specification

http://www.w3.org/TR/geolocation-API/
Recipients must only request location information when necessary. Recipients must only use the location information for the task for which it was provided to them. Recipients must dispose of location information once that task is completed, unless expressly permitted to retain it by the user. Recipients must also take measures to protect this information against unauthorized access. If location information is stored, users should be allowed to update and delete this information.

The recipient of location information must not retransmit the location information without the user’s express permission. Care should be taken when retransmitting and use of encryption is encouraged.

Recipients must clearly and conspicuously disclose the fact that they are collecting location data, the purpose for the collection, how long the data is retained, how the data is secured, how the data is shared if it is shared, how users may access, update and delete the data, and any other choices that users have with respect to the data. This disclosure must include an explanation of any exceptions to the guidelines listed above.

http://www.w3.org/TR/geolocation-API/
Doty, Mulligan, Wilde, 2010
<table>
<thead>
<tr>
<th>What does it do?</th>
<th>Informed up front?</th>
<th>In Privacy Policy?</th>
<th>Lets user inspect?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Google Maps</td>
<td>✗</td>
<td>✓</td>
<td>✗</td>
</tr>
<tr>
<td>Google Local</td>
<td>✗</td>
<td>✓</td>
<td>✗</td>
</tr>
<tr>
<td>Flickr</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Travelocity iPhone</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>AskLaila</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>Search.ch</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Identi.ca</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Foreca Weather</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>BooRah Restaurants</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>GoThere</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>The Rocky Horror Picture Show</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>GraffitiGeo</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>GeoMail</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>Our Airports (mobile)</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>Our Airports</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>Plemi</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>AskAround.Me</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>gMapTip WordPress</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Your Mapper</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>BackNoise</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>BailBond.com</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
</tr>
<tr>
<td>Toupi.fr</td>
<td>✗</td>
<td>-</td>
<td>✗</td>
</tr>
</tbody>
</table>
third parties to the rescue?
Take your location to the web!

Update anywhere
- Send updates from your phone
- Update from your favorite sites
- Do it automatically or manually

Choose what to share
- You control your data
- You choose who to share with
- You choose how much to share

Have fun on the web!
- Show your location on your blog
- Share it with your friends
- Discover cool stuff around you

Get the latest news about Fire Eagle
- Fire Eagle Authorizations and more
- Temporarily stopping authorizations

Member login
Already a member? Log in to manage your location and...
What to do next:
- Update your location
- See your applications
- Edit your privacy settings
- Change your alerts

Update your location:
- oxford

When you update your location on Fire Eagle, all your apps get updated too!

Fire Eagle News
Fire Eagle Authorizations are back...
As you've already probably noticed again, Fire Eagle authorizations have been back up and running for a couple of days. We've got a big nasty scary message up for you before you click to authorize any app. You should read that. It's important! In the meantime, we thought we should probably let you guys know what's read more...

Temporarily stopping authorizations...
Some of you may have noticed that it's been difficult to authorize a new application to get access to, or update your Fire Eagle account over the last few days. This is because a security issue in the OAuth protocol—the mechanism by which we handle app authorization—has come to light, and as a result we've
Fire Eagle last spotted you less than a minute ago in Oxford, Oxfordshire, England using the Fire Eagle website. If you've gone somewhere else, then you should update your location!

Not in Oxford, Oxfordshire, England? Then where on Earth are you?

You can try anything from your street address to your ZIP code, neighborhood, or the name of your town.

Last spotted somewhere in: Oxford, Oxfordshire, England
My Location:

These are the applications you have authorized to *update* or *use* your location information. On this page you can change what these applications are allowed to do on your behalf.

<table>
<thead>
<tr>
<th>Application</th>
<th>What can it do?</th>
<th>Recent Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dopplr</td>
<td>Can read your location at the city level</td>
<td>Updated 25 days ago</td>
</tr>
<tr>
<td></td>
<td>Can set your location</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FireCheckIn</td>
<td>Can read your location at the exact level</td>
<td>Updated about 5 hours ago</td>
</tr>
<tr>
<td></td>
<td>Can set your location</td>
<td></td>
</tr>
</tbody>
</table>

Privacy Policy | Copyright Notice | Terms of Service | Report Abuse | Contact Us
---             | -----------------|-----------------|--------------|-------------
Copyright © 2007-2010 Yahoo! Inc. All rights reserved.
My Location:

Concerned about what sites and services can see your location? It's easy to manage how your information is used with Fire Eagle's built-in privacy tools.

You can temporarily hide yourself from sites and services you've authorized to use Fire Eagle. Fire Eagle will still receive information about your location but won't share it with anyone else until you unhide yourself.

Hide me!

Remember: Sites and services you've authorized may still continue to display your last public location.

You can purge your location information completely from the Fire Eagle database...

This deletes all your location information currently stored in the Fire Eagle database but does not stop your applications updating it with new information. You can delete your apps or edit your preferences in the My Applications section.

Purge all my location information from Fire Eagle

Remember: We can only purge information from our databases, not from services you've already shared it with.

Or—if you are sure—you can delete your Fire Eagle account...

We will delete all your location, application and account information from Fire Eagle. The rest of your Yahoo! account will be unaffected.
what’s next?
...and more “device APIs”...
“just like geolocation?”
privacy requirements

http://dev.w3.org/2009/dap/privacy-reqs/
<table>
<thead>
<tr>
<th>Privacy Element</th>
<th>Requirements for API Definitions</th>
<th>Requirements related to User Expectations of Data Use</th>
<th>Best practices for developers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notice</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Consent</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimization</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Control</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Access</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retention</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Secondary Use</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Sharing</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Results for withings

eudamon: My weight: 215.1 lb. 23.1 lb to go. weight measured by
6 minutes ago from WiTtw · Reply · View Tweet

metabonow: わたしの体重 : 67.7 kg. 測定なら！ http://withings.com
8 minutes ago from WiTtw · Reply · View Tweet

LifeMeasure: My weight: 186.7 lb. 17.7 lb to go. http://withings.com
12 minutes ago from WiTtw · Reply · View Tweet

32 minutes ago from WiTtw · Reply · View Tweet

44 minutes ago from WiTtw · Reply · View Tweet

kevinsweight: My weight: 215.8 lb. my weight today http://withings.com
about 1 hour ago from WiTtw · Reply · View Tweet

http://withings.com
about 1 hour ago from WiTtw · Reply · View Tweet

UncleLar: My weight: 227 lb. 35 lb to go. according to my Withings scale
about 1 hour ago from WiTtw · Reply · View Tweet
policies?
who writes them?
who mediates them?
where are the deployment incentives?
usability?
where do we go from here?